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Age effect on spelling development in dyslexic Croatian English as a Foreign Language (EFL) learners

Summary

This paper considers spelling skills development in English as a Foreign Language (EFL) of two dyslexic Croatian learners of different ages. The data was collected when the participants received instruction based on an explicit approach and after this period, when no such instruction was provided. To discuss the differences between the participants, the misspelling data has been presented qualitatively to track developmental trajectories. Also, the quantitative approach was used to examine the need for overlearning and the effect of the instruction on long-term retrieval. The findings suggest that spelling development in Croatian dyslexic EFL learners is progressive, and cannot be considered stage-like but rather as a dynamic process, in which individual differences may play a significant role.

Key words: English as a Foreign Language, developmental dyslexia, spelling development, individual differences, explicit spelling instruction

1. INTRODUCTION

In some languages, learning to spell can be a challenging task. For example, in English the learner needs to choose between a few alternatives for one phoneme. Therefore, spelling development in English is slower compared with languages of more transparent orthography (e.g., Wimmer & Landerl, 1997), and can be particularly challenging for those with spelling difficulties, for example dyslexic learners, who struggle with reading and writing skills due to poor phonological awareness.

The research on dyslexia and spelling skills in English as a Second/Foreign Language learning (ESL/EFL) has investigated the effect of the first language (L1) (e.g., D'Anguilli et al., 2002), error analysis (e.g., Kaldonek, 2011), and the effectiveness of direct spelling instruction (e.g., Mortimore et al., 2014). So far, however, unlike the research on spelling skills development in monolingual dyslexic children (e.g., Nunes & Bryant, 2006) or typically developing second language (L2) learners (e.g., Nassaji, 2007), developmental trajectories of spelling skills in dyslexic EFL learners of different ages have not been examined yet. Information about how particular spelling skills are developed in specific groups of learners may be useful to ESL/EFL teaching practice. Therefore, and in the light of the existing theories on spelling skills development (Siegel, 1996; Bahr et al., 2009), the present longitudinal case study investigated spelling skills development in two dyslexic Croatian EFL learners, who differ from each other in age. The findings presented in this paper have practical pedagogical implications in regard to teaching spelling skills to dyslexic EFL learners, both children and adults, with Croatian L1 or another Slavic language with a similar written system. The findings also report on the effectiveness of spelling instruction. It can be stated that age effect is salient in spelling skills development. This further suggests adopting differentiated EFL teaching practice in regard to, for example, the duration of spelling instruction and teaching specific spelling skills.

2. SPELLING DEVELOPMENT IN ENGLISH

In learning to spell in English, children go through several developmental stages, from non-phonological spelling as the initial stage, to the ability to produce phonologically adequate spelling as the final stage (Pollo et al., 2007).

In early spelling stages, children often invent spelling for the sounds they have not acquired yet.

Read (1986) observed that in the mistakes the children make at this stage, although their written representations are not correct, they show some phonological awareness. Even random strings of letters may be considered as some representation of a written system that children have been exposed to in an early stage of their lives.

Treiman and colleagues observed that children show sensitivity to letter frequency, such as *e* in English (Pollo et al., 2009), and pay special attention to the letters presented in their name (Treiman et al., 2001). However, they tend to use mainly consonants due to many unstressed vowels in the English language. Therefore, vowel omission is a common error in spelling in English. Yet, children are prone to misspell consonants; usually sonorant consonants such as /n/, /m/, /r/ or /l/, rather than obstruent /f/, /s/ or /t/, are omitted since they are regarded as the qualities of the vowel that precedes them. Also, the omission of an internal consonant of the initial consonant cluster, for example *n* in the *sn* cluster, is common in younger children (Treiman, 1994).

As reading experience grows, children start to be more sensitive to the consistencies and regularities, and start recognising morphological structure of the language, which further contributes to acquisition of phonological inconsistencies (Snowling & Göbel, 2011). For instance, children are more likely to spell a word correctly if it contains a morpheme boundary (Treiman et al., 1994), or the initial consonant in a consonant cluster is more likely to be correctly spelt if it contains a morpheme at the end (Treiman & Cassar, 1997). Yet, some inflected forms are acquired in an early stage, but derived forms are acquired later (Deacon, 2008). For instance, suffixes *-tion* and *-cian* are rarely present in the spelling of 10-year-olds, unless they are taught explicitly (Nunes & Bryant, 2006). Similarly, the acquisition of verb endings and their accurate application is a slow process (Bourassa et al., 2011).

Moreover, children take quite a time to learn how to use double consonants; how they are influenced by preceding vowel (Cassar & Treiman, 1997), by syllabic stress (Bourassa & Barga, 2013), or by following consonant context (Treiman & Kessler, 2006).

Ehri (1991, 1992) concluded that as children make common misspellings in each developmental stage, however, the misspelling of the previous stages may occur at any late stage. Therefore, orthographic and phonological errors were common in all school children (Bahr et al., 2009). Younger children struggle mainly with representing all the linguistic elements in the word, whereas older children make errors in root words and have difficulty in spelling multisyllabic words with possible choices for a sound

and with the deletion of an unstressed syllable. Older children also make more morphological errors since they start using a wider range of derivations with a more complex orthographic, phonologic or phonologic-orthographic shift. Mastering this shift depends on the child's metalinguistic awareness and vocabulary knowledge (Carlisle, 2000). Otherwise, misspelling occurs because the child has still insufficient knowledge to cope with linguistic complexity of vocabulary. For instance, children tend to overuse the inflection *ed* once they learned it (Nunes et al., 1997), or overextend the principle of morphological constancy (Bourassa & Treiman, 2008). However, even though a word is misspelt according to spelling conventions, there can be phoneme-grapheme correspondence, which makes the word phonetically plausible (Bahr et al., 2009), and in this way written communication is not impeded.

These findings suggest that there is a continuous interaction between phonology, orthography and morphology in spelling development. This interrelation allows the ascertainment of individual differences between the children rather than determining the characteristics of each developmental stage (Bahr et al., 2009; Berninger et al., 2009), as sequential development may occur even within one word (Varnhagen, 1995). Therefore, spelling development can be discussed within the "overlapping waves" theory proposed by Siegel (1996). One of the advantages of this theory is that it allows discussing the development of spelling skills qualitatively and quantitatively within one framework (Siegel, 2005).

Regarding spelling development in bilingual learners, there are no significant differences between them and their monolinguals peers. The same factors as in L1 contribute to spelling development in L2, i.e. phonological knowledge, letter knowledge and orthographic knowledge (Abu-Rabia & Siegel, 2002). Similarly to monolinguals, bilingual learners produced more complex misspellings (orthographic and morphological) along with developing reading and writing skills. Also, development of their spelling skills is not linear since early stage errors may occur in more advanced stages of development and a variance in misspelling may be within one word (Nassaji, 2007).

In foreign language learning, a number of studies have reported a connection between linguistic abilities in L1 and L2 spelling (e.g., James et al., 1993; Sparks et al., 2008). Yet interestingly, Kahn-Horwitz and colleagues (2012) have observed that phonemic awareness in L1 (Hebrew) did not contribute significantly to spelling in EFL. Such a lack of contribution may be due to the differences in orthographic systems of the languages. Therefore, L1 linguistic abilities are not the main factors

that affect spelling development in EFL. They concluded that the main predictor of spelling development in EFL at the early stage is English letter knowledge.

3. DYSLEXIA AND FOREIGN LANGUAGE ACQUISITION

Discussion about a possible linkage of aptitude in the native and foreign language learning began in the 1960s. Carroll (1962) argued that the best predictor of the achievement in learning a foreign language is the learner's general language ability, which was later referred to as 'aptitude' (Dörnyei & Skehan, 2003: 589). This aptitude is weaker in dyslexic learners, and therefore they usually find the phonology, orthography, syntax and structural aspects of a foreign language problematic (Crombie, 2000).

Ganschow and Sparks (1991) offered an alternative dimension of the role of aptitude within the 'Linguistic Coding Deficit Hypothesis'. The hypothesis was based on an assumption that foreign language learning is either enhanced or limited by the degree to which a learner has control over "phonological, syntactic, and semantic components of the linguistic code" in their native language (Sparks & Ganschow, 1991: 10). This hypothesis was supported by a number of studies (e.g. Hulstijn & Bossers, 1992; Chen, 2001). Therefore, it has been assumed that dyslexic learners are likely to manifest similar difficulties to those in their native language (Crombie, 2000). However, the difficulties of acquiring a foreign language may depend on the language in question. For instance, problems with phonological manipulation skills are less apparent in languages of shallow orthography (phonologically transparent). Therefore, languages with a deep orthographic system, such as English, will be more difficult to acquire for dyslexics (Schneider & Crombie, 2003).

4. SPELLING DEVELOPMENT IN DYSLEXIC LEARNERS

When dyslexic children are compared with their typically developing peers, they perform more poorly on many spelling tests. However, if dyslexic children are matched with younger, typically developing peers, they perform similarly on tests measuring graphotactic accuracy and phonological awareness. Dyslexic children are likely to make similar linguistically based errors as their typically developing younger controls when spelling non-words and real words (Bourassa & Treiman, 2003). Since there was no significant difference in spelling real words and non-words, it cannot be held that dyslexic children only rely on visual memory when spelling to compensate

their poor phonological awareness. Therefore, they must rely on phonological awareness (Cassar et al., 2005). For instance, dyslexic children are equally sensitive to morphological patterns when spelling root morphemes in more morphologically complex words (Bourassa et al., 2006, 2011; Bourassa & Treiman, 2008).

Reid (2004: 145) lists typical errors made by dyslexic children in English: the final *y* spelt as *ie*, mis-position of letter blends such as *ie* (e.g., *review* is spelt *reveiw* or *revue*), confusion over some combinations of alike sounds (e.g., *ee* and *ea* in *weak* and *week*), words pronounced the same but spelt differently (e.g., *knight* and *night*), misspelling of some sound clusters (e.g., *gh* in *night*), confusion over the application of the word endings (e.g., *fraction* is spelt *frac*sion), omission of final silent *e*, confusion over the employment of *wh* which is usually spelt *w*, lack of employment or unnecessary employment of double letters, adding unnecessary letters in words, and phonetic spelling of words (e.g., *wey* instead of *way*).

The phonological deficit in bilingual dyslexic children is similar to their native English peers (Wade-Woolley & Siegel, 1997; Everatt et al., 2000). Yet, interestingly, it was found that dyslexic native English speakers performed poorer on spelling tests than their peers with L2 English (Abu-Rabia & Siegel, 2002; D'Anguilli et al., 2002). This difference may be due to the positive transfer from L1 that has higher grapheme-phoneme correspondence than English (Siegel & Smythe, 2004). However, dyslexic EFL learners make more spelling errors compared with their non-dyslexic peers (Kałdonek, 2011). The errors include the application of vowels, consonant clusters, and double consonants, as well as letters being added or omitted (Sarkadi, 2008; Kałdonek, 2011; Kormos & Mikó's unpublished data in Kormos & Smith, 2012: 76). Also, the spelling of the same words may be inconsistent (Kałdonek, 2011). However, there may be some similarities between dyslexic and non-dyslexic learners regarding the types of errors, for example the application of double letters and the exchange of the vowels *a* and *e* (Kałdonek, 2011). This may suggest that dyslexic EFL learners experience difficulties that are typical for most foreign-language learners. These are the difficulties caused by the interference with the native language or errors typical for L2 learners (Helland, 2008).

Dyslexia is a delay in the development of spelling skills, but dyslexic children use similar spelling strategies, show the same developmental patterns in spelling acquisition, and make similar errors as their typically developing peers. Yet, since their spelling ability is at the lower end of the continuum (Bourassa & Treiman, 2008), achieving a stable and integrated spelling system may be a struggle for them (Bahr et

al., 2009). Therefore, adopting adequate teaching methods may be crucial in this regard.

5. SPELLING INSTRUCTION

Traditionally, spelling instruction has been based on implicit input and reliance on memorization and intensive practice. One of the arguments why the memorization strategy may be successful in learning spelling in English is that the consistency of English is as low as 8% (Kessler & Treiman, 2003: 275). Therefore, learning to spell some English words may require learning an entire lexical form (Mildner, 2003).

There is a ubiquitous belief that learning spelling is a visual memory activity (Bahr et al., 2009); yet, since spelling is an orthographic and phonological orthographic activity (Berninger et al., 1998) or orthographic, phonological and morphological activity (Treiman & Cassar, 1997), an alternative spelling instruction could be adopted.

Many authors suggest that spelling in English should be approached analytically in order to provide practical learning aid (Frith, 1980; Kessler & Treiman, 2003). The explicit spelling instruction is of special importance to learners with specific spelling difficulties as they are at the lowest level of the developmental spectrum in terms of spelling acquisition (Treiman & Bourassa, 2000). In addition, remedial instruction should consider individual differences and specific difficulties (Frith, 1980), as well as to be continuous to ensure sustainable spelling development (Mortimore et al., 2014).

Spelling rules are based on certain principles such as letter position, vowel-consonant combinations, contextual regularities (Kessler & Treiman, 2003), and morphological conventions (Snowling & Göbel, 2011). Special attention should be paid to vowels and to the position of the consonant in reference to the vowel (Kessler & Treiman, 2003), as well as the consideration of alternative spelling patterns (Bourassa & Bargen, 2013).

However, the analytical approach requires conscious awareness, which is developed continuously throughout the life. Children's inductive and deductive reasoning will depend on their working memory capacity and efficiency of long-term knowledge retrieval and of inhibitory processes (Goswami, 2011). Therefore, the memorization and the whole-word strategy may be successful in teaching spelling to

younger children due to their lower metacognitive awareness and insufficient knowledge of the language structure.

6. THE PRESENT CASE STUDY

The present case study is an analysis of spelling skills development of two dyslexic EFL learners with L1 Croatian, who differed in age (a child and an adult). The aim was to identify individual differences between the participants. The following questions were asked:

1. Will it be possible to distinguish stages of spelling development?
2. Will it be possible to identify age-related misspellings?
3. Will the participants differ in terms of acquisition of spelling skills?

6.1. Method

6.1.1. Participants

The participants of the case study were two dyslexic Croatian male EFL learners. They were both diagnosed with dyslexia in their mother tongue by a speech and language specialist and psychologist. Both participants had difficulty in spelling in their L1, which was also manifested in EFL.

Participant 1 (P1) was 10 years and 8 months old when he entered the case study, and 13 years and 3 months old when the case study finished. Participant 2 (P2) was 21 years and 8 months old when the case study started, and 24 years and 3 months old when it finished. Both participants learned English in primary and secondary school, where traditional foreign language teaching methods were used.

P1's EFL knowledge was assessed according to the national curriculum for primary school (*Nastavni plan i program za osnovnu školu, Ministarstvo znanosti, obrazovanja i športa*, 2006). A test was designed to assess the English language skills that are taught in the first four grades of primary school. The results of the test showed that P1's English skills were at the level of grade one, which suggested a three-year delay in reference to curriculum requirements. In regard to writing skills, P1 did not recognize the difference between the English spelling system and the spelling system of his mother tongue and he also tended to write phonetically.

The academic version of the *International English Language Testing System* (IELTS) was used to assess P2's level of English. The overall competence in English of P2 was at the level of strong intermediate. The scoring of the listening and writing

parts of the test was significantly affected by misspellings. In the listening part 63% of the incorrect answers were incorrect due to misspellings, whereas in the writing part 23% of the words were spelt incorrectly.

Table 1. Information about the participants

Tablica 1. Podaci o ispitanicima

	Participant 1 (P1)	Participant 2 (P2)
Age when participant entered the case study	10 years and 8 months	21 years and 8 months
Age when the study finished	13 years and 3 months	24 years and 3 months
Manifestations of dyslexia in L1 and EFL	Spelling difficulties	Spelling difficulties
Level of language competence in English at the beginning of the case study	Test used: self-designed based on the national curriculum for primary school (<i>Nastavni plan i program za osnovnu školu, Ministarstvo znanosti, obrazovanja i športa</i> , 2006); overall competence at the level of grade one; three-year delay in reference to the curriculum requirements	Tests used: <i>International English Language Testing System</i> (IELTS) overall competence was strong intermediate; the listening and writing parts of the test was significantly affected by misspellings (63% of the incorrect answers in the listening part were incorrect due to misspellings; 23% of the words were spelt incorrectly in the writing part)

6.1.2. Longitudinal data

The case study was divided into two main phases: teaching and non-teaching. The teaching phase lasted between April 2011 and August 2012 (18 months), during which the effect of explicit spelling instruction was observed. Both participants attended one lesson per week.

The teaching phase was further divided into three sessions. Session 1 lasted 10 weeks, session 2 was 15 weeks, and session 3 was 20 weeks. After each session there was a break of 4 weeks (after session 1), 6 weeks (after session 2), and 4 weeks (after session 3). The breaks were arranged in accordance with the participants' school timetable.

In every lesson, the participants learned between two to five new words. Also, baseline assessment was conducted in the form of dictation in a meaningful context in every lesson. The aim was to establish the initial misspelling of the new word. The spelling of a word was taught until full acquisition occurred, however no longer than for five consecutive lessons. The phonological, orthographic and morphemic aspects of the language were taught in an explicit, direct and structured way using multisensory techniques according to the *Multisensory Structured Metacognitive* (MSM) method (Schneider, 1999). The metacognitive element of this method required from the learner to think consciously about linguistic concepts, for example, by discussing the rules and applying self-correction, whereas the teacher was required to ask thought-provoking questions and use non-verbal gestures in order to achieve higher metalinguistic awareness.

The retrieval of the words taught in the previous lesson was assessed at the beginning of the following lesson in the form of dictation in a meaningful context to verify the need for overlearning (depending on how many classes the spelling of a word had to be taught to be fully acquired). The participants had an unlimited time to spell the word and could make corrections. The long-term retrieval was assessed after each break and included the words that were fully acquired in the preceding sessions.

The content of the lessons was adjusted to the participant's knowledge and needs. The words were presented in a meaningful context derived from the learner to make the instruction more effective. Teaching resources included various EFL textbooks and authentic materials.

In order to control overlearning and retrieval, the words were taught and revised only in the classroom. However, the participants were exposed to English outside the classroom. P1 learned English at school, whereas P2 had contact with the language when using the internet, watching films and doing reading for his university studies. Both participants also learned other foreign languages at the time of the instruction. P1 learned German whereas P2 learned Italian.

The non-teaching phase was the period of 16 months (September 2012 – January 2014) after the break that followed session 3. During this time the participants did not receive explicit spelling instruction. The assessment of the acquired words in all three sessions was administered to investigate the long-term retrieval.

Table 2. Description of the longitudinal data

Tablica 2. Opis longitudinalnog istraživanja

Teaching phase	<ul style="list-style-type: none"> • Duration: 18 months • 3 sessions of teaching: 10 weeks, 15 weeks, and 20 weeks, with breaks of 4, 6, and 4 weeks between the sessions, respectively • Method of teaching: explicit spelling instruction (<i>Multisensory Structured Metacognitive</i> (MSM) method) • Frequency of lessons: 1 lesson weekly • Number of items taught per lesson: 2-5 words • Assessment of the initial spelling pattern: dictation of a new word • Assessment of short-term retrieval: dictation in every lesson; the words taught in the previous lesson to establish the need for overlearning • Assessment of long-term retrieval: dictation after each break; the acquired words in the preceding sessions
Non-teaching phase	<ul style="list-style-type: none"> • Duration: 16 months • No explicit spelling instruction provided • Long-term retrieval: dictation; the acquired words in all three sessions

6.1.3. Analytic procedures

The complexity of dyslexia, the developmental differences between the participants and the choice of vocabulary they needed to learn, required the usage of mixed methods. In order to answer the research questions, the qualitative approach was used to track developmental changes in spelling on the word-level, whereas the quantitative approach was used to investigate the need for overlearning and the effect of the instruction on long-term retrieval.

The data was discussed for each participant for the words of each session using the following layout: baseline assessment, learning process, misspellings analysis, and long-term retrieval. Additionally, the need for overlearning in relation to the rate of learning and the relationship between overlearning and long-term retrieval were discussed. The following codes were used in reference to the assessment of long-term retrieval:

Table 3. Test codes for assessment of long-term retrieval in each phase

Tablica 3. Kodovi testova za provjeru dugoročnog dohvaćanja u svakoj fazi

Long-term retrieval assessment	Words taught in Session 1	Words taught in Session 2	Words taught in Session 3
In the teaching phase	TEST_1_a – after the break that followed session 1	TEST_2_a – after the break that followed session 2	TEST_3_a – after the break that followed session 3
	TEST_1_b – after the break that followed session 2	TEST_2_b – after the break that followed session 3	
	TEST_1_c – after the break that followed session 3		
After the non-teaching phase	TEST_1_d	TEST_2_c	TEST_3_b

7. RESULTS

Participant 1 (P1)

In session 1, in the baseline assessment, P1 wrote phonetically relying on L1 orthographic conventions for both consonants and vowels, for example: *ar* (*are*), *afternun* (*afternoon*), *blek* (*black*), *fajn* (*fine*), *grin* (*green*), *nejm* (*name*), *hau* (*how*), *grej* (*grey*), *si* (*sea*), *votr* (*water*). Yet, he used English language spelling conventions in the word *orange* (*oreng*) as he wrote *g* for the sound /dʒ/ instead of relying on L1 (*d*).

In the learning process, P1 acquired the spelling of 15 words, which was 48% of the vocabulary he was exposed to. He slowly started applying some English orthographic patterns for consonants and vowels, for example: *bleck* (*black*), *fin* (*fine*), *gren* (*green*), *neim-nama* (*name*), *ol-olt* (*old*), *orang-oreange* (*orange*), *voter-woter* (*water*).

The misspellings included the omission of the final silent *e* (e.g., *fine*, *orange*) and of the medial *r* when it followed the vowel in the process of elision (e.g., *afternoon*, *morning*). He also added random letters that did not have any phonological representation, for example, in the word *name* (*nama*), and failed to apply vowel sounds such as /i:/, for example in the word *green* (*gren*), /u:/, for example in *afternoon* (*aftenon*) or *good* (*god*), /æ/, for example in *black* (*bleck*), and /ɔ:/, for example in *water* (*woter*). He also misspelt the initial consonant *y*, for example in *yellow* (*jelow*) or *you* (*iju-iou*), and the final one, for example in *grey* (*grei-grej*), as well as consonant clusters such as *wh*, for example in *what* (*woc-wot*), consonant phoneme /θ/, for example in *thank* (*fenk-tenk-tank*), and vowel-consonant blends such as *ur* pronounced /ɜ:/, for example in *purple* (*prpl*).

Interestingly, P1 depicted the phoneme /ɪ/ as *y* to distinguish it from /i:/ in the word *pink* (*pynk*); the letter *y* does not exist in the Croatian alphabet. Also, he referred to the other foreign language he was learning at the time (German) in the word *hello* (*halo*) and *blue* (*blau*).

Regarding long-term retrieval, in TEST_1_a, P1 recalled only 2 words (*is*, *old*) of the words he had acquired (13%). In TEST_1_b, an improvement of 27 percentage points was observed; P1 correctly spelt additional 4 words (6 words were retrieved; 40%). These were the words that contained final silent *e* (*are*, *blue*, *name*, *orange*). In addition, the phoneme /u:/ in the word *afternoon* was correctly spelt and the word *hello* was not referred to in the German language (*helo*). However, the spelling of some words deteriorated, for example, the word *fine* was spelt *fayn*. Also, the consonant *k* in the word *pink* was spelt *g*, and *d* in the word *good* was spelt *t*.

In TEST_1_c, further improvement by 13 percentage points was observed. P1 correctly spelt additional 2 words compared with TEST_1_b (*hello*, *morning*); 8 words were retrieved (53%). The spelling of the word *green* improved since phonetic spelling was not applied (*gren*). However, the quality of spelling of some words deteriorated, for example, *e* was added to the word *water* (*wotare*) and the word *good* was spelt phonetically or German spelling was applied (*gut*).

In TEST_1_d, no quantitative improvement was observed compared with TEST_1_c. In addition, the quality of spelling of some words deteriorated, for example in the word *afternoon* the vowel *o* was omitted (*aftenon*), the word *blue* was spelt *blou*, and in the word *water* the letter *h* was added (*wother*).

Table 4. Results of long-term retrieval assessment of the words taught in Session 1 (P1)

Tablica 4. Rezultati provjere dugoročnog dohvaćanja riječi iz sesije 1 (P1)

No. of the words acquired	TEST_1_a	TEST_1_b	TEST_1_c	TEST_1_d
15 words; 48% of the words P1 was exposed to	2 words (13%)	6 words (40%); an improvement of 27 percentage points	8 words (53%); an improvement of 13 percentage points	8 words (53%); no improvement

In session 2, in the baseline assessment, P1 wrote phonetically and relied on L1 orthography for both consonants and vowels, for example: *hi* (*he*), *inglis* (*English*), *ileven* (*eleven*), *ket* (*cat*), *kar* (*car*), *san* (*sun*), *traktor* (*tractor*). However, for some consonants he used English spelling conventions, for example, phoneme /dʒ/ in the word *jam* (*jem*). Also, the vowel *i* pronounced /ɪ/ was correctly spelt in most of the words (e.g., *ill*, *live*). Interestingly, for phonemes *sh* and *ch* P1 wrote *s* and *c* instead of relying on L1 (š, č), which may suggest that he was already aware of the difference between the Croatian and English orthography for these phonemes (this knowledge may have been acquired during EFL lessons in school). Moreover, the fact that in the word *milk* the phoneme /k/ was written as *ck* may suggest the impact of the knowledge acquired in session 1. Such an impact was also observed in the word *swim*, in which the phoneme /w/ was correctly spelt. Yet, as in session 1, P1 applied *y* to depict the phoneme /ɪ/ in this word (*swym*). The word *school* was also written with double *o* (*scool*). However, it is likely that P1 used the whole-word strategy instead of relying on the pronunciation of the double *o* sound. He may have acquired it during EFL lessons in school as a high-frequency word.

In the course of learning, P1 acquired the spelling of 30 words, which was 91% of the words to which he was exposed. He managed to acquire some consonant phonemes, such as *c* for /k/ (e.g., *cat*), *sh* for /ʃ/ (e.g., *fish*) and *ch* for /tʃ/ (e.g., *teacher*).

Regarding vowels, P1 acquired phoneme /ʌ/ (e.g., *bus, sun*), /æ/ (e.g., *cat, have*) and /ɔ:/ for the vowel *a* (e.g., *small*), /i/ for the vowel *e* (e.g., *English*), /ɜ:/ for the vowel-consonant blend *ir* (e.g., *girl*), and final silent *e* (e.g., *like, live*). He also acquired the correct application of the apostrophe in the word *don't* but not in the word *isn't*, the phoneme /i:/ or /i/ in the words *he* and *she*, /əʊ/ in the word *go* and /ə/ in the word *to* for the vowel *o*, and the phoneme /i:/ for *ea* in the word *teacher* but not in the word *reading*.

Regarding long-term retrieval, in TEST_2_a, P1 retrieved 40% of the acquired words (12 words). These were high-frequency words with high orthographic transparency (*bus, car, school, tractor, fish, he, sun, she, don't, go, like, to*).

In TEST_2_b, an improvement of 10 percentage points was observed. P1 spelt additional 3 words (*English, live, milk*); 15 words were retrieved (50%). However, the spelling of some words deteriorated compared with TEST_2_a, for example in the word *have* the consonant *v* was replaced with *f* (*hef*), in the word *small* the letter *l* was omitted (*smol*), and in the word *swim* the phoneme /w/ was written as *v* (*svim*).

In TEST_2_c, a regression was observed (the score declined by 7 percentage points compared to the results of TEST_2_b); 13 words were retrieved (43%). The words that were misspelled were the word that contained an apostrophe (*don't*), the word *English* was spelt *Englesh*, the word *go* was spelt *gou*, *live* was spelt *lif*, *sun* was spelt *son*, and the word *this* was spelt *dis*. Despite this, some qualitative improvement was reported for some words compared with the previous assessment, for example, the words *eleven, egg* and *swim* were correctly spelt.

Table 5. Results of long-term retrieval assessment of the words taught in Session 2 (P1)

Tablica 5. Rezultati provjere dugoročnog dohvaćanja riječi iz sesije 2 (P1)

No. of the words acquired	TEST_2_a	TEST_2_b	TEST_2_c
30 words; 91% of the words P1 was exposed to	12 words (40%)	15 words (50%); an improvement of 10 percentage points	13 words (43%); regression (the score declined by 7 percentage points compared to TEST_2_b)

In session 3, in the baseline assessment, the vowel phonemes were spelt phonetically with reliance on L1, for example: *tri* (*tree*), *bred* (*bread*), *bai* (*buy*), *bater* (*butter*), *hend* (*hand*), *izy* (*easy*), *leizi* (*lazy*). This may suggest that P1 did not apply the knowledge acquired in previous sessions such as for phonemes /u:/ in the word *room* (*rum*), /ʌ/ in *butter* (*bater*) or /eɪ/ in *lazy* (*leizi*). However, the effect of the knowledge acquired in the previous sessions was observed in regard to the phoneme /ʃ/, which was written as *sh* in the words *sugar* and *shoulder*.

In the learning process, P1 acquired the spelling of 29 words, which was 83% of the words to which he was exposed. P1 correctly applied the final *y* pronounced /i/ (e.g., *sleepy*, *easy*, *happy*), as well as double consonants in the words *butter* and *funny*. However, he failed to acquire the spelling of the phoneme /θ/, for example in the word *three* (*tri-tre*) and *teeth* (*tif-teeff*), /əʊ/ in *slow* and *snow*, and /ju:/ in *new* (*nju*), as well as the words with more than five letters (*difficult*, *shoulder*) and the words of low letter-sound correspondence (e.g., *juice*). The vowel phonemes were spelt phonologically in reliance on L1 in most of the words, for example: *engry* (*angry*), *tri* (*three*), *baik-bayk* (*bike*), *slipy* (*sleepy*), *fany* (*funny*), *hend* (*hand*). However, for some words the vowel phonemes were acquired, for example, /aɪ/ in the word *ice* and *rice*, /ɑ:/ in *arm*, /eɪ/ in *scared*, and /i/ in *teeth*.

Regarding long-term retrieval, in TEST_3_a P1 retrieved 34.5% of the words he had acquired; 10 words were retrieved. The words that were correctly spelt were the words with high letter-sound correspondence (*arm*, *sugar*), the words that contained phoneme /i:/ (*bee*, *tree*), /u:/ (*room*), /aɪ/ (*ice*), /ʌ/ (*uncle*), and /æ/ (*angry*, *hand*), as well as the word *nose*, which has a similar transcript to P1's L1 (*nos*).

In TEST_3_b, a regression was observed (the score declined by 17.5 percentage points); 5 words were retrieved (17%). The words that were misspelled were the words that contained vowel phonemes /i:/ (*bee*, *tree*), /aɪ/ (*ice*), /ʌ/ (*uncle*), and /æ/ (*angry*, *hand*), and the word *nose*, which was spelt using L1 transcript (*nos*). Also, the quality of the spelling of some words deteriorated compared with the previous assessment, for example, the vowel *a* in *scared* was spelt *e* and final *y* pronounced /i/ was spelt phonetically in all the words, for example in the word *sleepy* (*slipi*). Interestingly, double consonants were omitted in the word *funny* but applied in *happy*, which was contrary to the data obtained in TEST_3_a. Also, the words *slow* and *snow* were correctly spelt.

Table 6. Results of long-term retrieval assessment of the words taught in Session 3 (P1)

Tablica 6. Rezultati provjere dugoročnog dohvaćanja riječi iz sesije 3 (P1)

No. of the words acquired	TEST_3_a	TEST_3_b
29 words; 83% of the words P1 was exposed to	10 words (34.5%)	5 words (17%); regression (the score declined by 17.5 percentage points)

In terms of overlearning, the words that did not require overlearning, or required only one-time overlearning, were two- or three-letter words with high grapheme-phoneme correspondence, high-frequency words, and the words that have similar transcript to P1's L1. Two- or three-time overlearning was required for longer words, with vowel phonemes that are not present in P1's L1, the words with double consonants, with the phoneme /ʃ/ at the end of the word, and the words that contained the silent *e*. The words that required overlearning of four or five times were the words with low grapheme-phoneme correspondence and the words with similar pronunciation.

In regard to overlearning, the evidence suggests an improvement in the rate of learning. In session 1, P1 needed overlearning at least twice, whereas in session 2 only once, and in session 3, he did not need overlearning in 10% of the vocabulary. In addition, P1 acquired significantly more words in session 2 (91% of the words he was exposed to) and in session 3 (83%) compared with session 1 (48%).

However, a clear relationship between overlearning and long-term retrieval was not observed. It could have been presumed that the words that were acquired faster would be more likely to be retrieved. Yet, none of the words that did not require overlearning and the words that required four-time overlearning were retrieved, whereas 50% of the words that required overlearning once, 39% of the words that required overlearning twice, and 30% of the words that required overlearning three times were retrieved.

Participant 2 (P2)

In session 1, in the baseline assessment, P2 added letters, for example in the word *about* (*abouté*), *also* (*alsoe*) or *went* (*whent*), and omitted double consonants (e.g.,

communication) and silent letters, for example in the word *insentive* (*insentiv*), *limb* (*lim*) and *which* (*wich*). He also wrote some phonemes phonetically, for example, /ks/ in *extraordinary* (*ekstraordinary*), /v/ in *because* (*becose*), /ð/ in *then* (*den*), /3:/ in *world* (*werld*), /v/ in *would* (*wud*), and /aʊ/ in *without* (*wiidaut*). He also had difficulty in applying adjective and noun suffixes, for example in the word *rigorous* (*regorus*), *reliable* (*relabl*), *association* (*asociasion*), and vowel phonemes, for example, /æ/ in the word *January* (*jenuary*), /aɪ/ in *participate* (*participet*), /ʌ/ in *summer* (*somer*), and /ə/ in *was* (*wos*).

In the learning process, P2 acquired the spelling of 51 words, which was 100% of the vocabulary to which he was exposed. He quickly started avoiding phonetic spelling and applied English language orthographic conventions for some adjective and noun suffixes (*ive*, *able*, *sion/tion*), for some vowel phonemes in high-frequency words (e.g., *because*, *summer*, *was*, *would*), and the vowel-consonant blend *or* pronounced /3:/ (e.g., *world*). He also avoided adding random letters.

However, P2 found it difficult to acquire the spelling of the words that contained silent letters, for example in the words *Tuesday* (*Tusday*) and *Wednesday* (*Wenesday*), double consonants (e.g., *association*), /ə/ in longer words, for example in the word *difficult* (*difficolt*), /æ/, for example in *January* (*jenuary*), /3:/ for the *ear*, for example in the word *early* (*erly*), the adjective suffix *ous*, for example in the word *rigorous* (*regorus*), the words with *wh*, for example in the word *whole* (*hole*), and words with similar pronunciation (*whether*, *weather*).

Regarding long-term retrieval, in TEST_1_a, P2 recalled 45% of the words he acquired (23 words). He correctly spelt high-frequency words (e.g., *was*, *also*) and the words with high orthographic transparency (e.g., *most*). Also, the prefix *-extra* and *-un*, adjective and noun suffixes, except for *ous*, were correctly spelt. The misspellings included the omission of double consonants and silent letters, for example in the word *Wednesday* (*Wenesday*), letter adding, for example in the word *paved* (*paived*), as well as incorrect spelling of the vowel phoneme /ʌ/, for example in the word *results* (*resolts*). P2 also confused the spelling of words of similar pronunciation (*here*-*hear*, *than*-*then*, *whether*-*weather*).

In TEST_1_b, an improvement of 21.5 percentage points was observed; 34 words were retrieved (66.5%). P2 did not add letters and correctly applied a double consonant in some words. However, the spelling of two words deteriorated: *across* (*accros*) and *reliable* (*relable*). Also, the words that sounded alike were misspelt. Interestingly, the spelling of the word *venue* was affected by the acquisition of the

sound /ju:/, which was introduced with the words *knew* and *new* during session 2; the word *venue* was spelt *venew*.

In TEST_1_c a further improvement of 2 percentage points was reported; 35 words were retrieved (68.5%). The additional word that was correctly spelt was the word *early*. Also, the quality of the spelling of some words improved, for example the silent *e* in the word *contribute*, the silent *b* in the word *limb*, and the suffix *ous* were correctly applied. Yet, the opposite was observed for some words, for example, an inconsistent application of *wh* in the words with initial *w* or *wh*.

In TEST_1_d, a further improvement of 17.5 percentage points was observed; 44 words were retrieved (86%). Double consonants were correctly applied and, with just one exception, (*dissertation*), the phoneme /ʌ/ was spelt correctly in all of the words, and the spelling of words with initial *w* and *wh* improved throughout. In addition, the words with almost identical pronunciation were correctly spelt. However, the quality of spelling of some words deteriorated, mainly by P2 employing unnecessary letters, for example in the word *most* (*moste*) or *rigorous* (*regorouse*).

Table 7. Results of long-term retrieval assessment of the words taught in Session 1 (P2)

Tablica 7. Rezultati provjere dugoročnog dohvaćanja riječi iz sesije 1 (P2)

No. of the words acquired	TEST_1_a	TEST_1_b	TEST_1_c	TEST_1_d
51 words; 100% of the words P2 was exposed to	23 words (45%)	34 words (66.5%); an improvement of 21.5 percentage points	35 words (68.5%); an improvement of 2 percentage points	44 words (86%); an improvement of 17.5 percentage points

In session 2, in the baseline assessment, the final *y* was spelt as *i*, for example in the word *Germany* (*Germani*) and *county* (*contri*), vowels and vowel clusters were spelt phonetically, for example *odience* (*audience*), *diuribl* (*durable*), *dabd* (*dubbed*), *siqel* (*sequel*). In addition the phoneme /ju:/ was spelt phonetically, for example *nu* (*new*) or *knu* (*knew*), silent *e* or *h* was added to some words, for example in the word *lot* (*lote*), *well* (*whel*) and *wig* (*wigh*). Adjective suffixes *able*, *ive*, *cient*, *ous* were also

incorrectly spelt, for example in the word *punishable* (*panishbhl*), *elective* (*electiv*), *efficient* (*efition*), *hediious* (*hidus*), with the exception of one word (*curious*). A double consonant was also omitted, for example in *effective* and *sunny*. Yet, some noun suffixes were correctly spelt such as *tion* (e.g., *foundation*) and *ment* (e.g., *placement*).

In the learning process, P2 acquired the spelling of 48 words, which was 100% of the vocabulary to which he was exposed. The words that were immediately acquired were the words of high orthographic and phonological transparency. Double consonants in all the words, vowels and vowel clusters such as the phoneme /ɔ:/ for *au* (e.g., *audience*), /ʌ/ in some words (e.g., *culture*), /ju:/ for *ew* (e.g., *knew*) were also correctly applied. The final *y* (e.g., *Germany*) and the adjective suffix *ous* (e.g., *hideous*) were, moreover, applied for most of the words. P2 took longer to acquire the adjective suffix *ive* (e.g., *elective*) and *cient* (e.g., *sufficient*), the words that contained silent letters (e.g., *stretching*, *widely*), the words with low phonological and orthographic transparency (e.g., *taught*), and the words with similar pronunciation and orthography (*bold*, *bald*).

In terms of long-term retrieval, in TEST_2_a, P2 retrieved 52% of the acquired vocabulary (25 words). He recalled the words with high orthographic and phonological transparency, double-consonant words and the words with the phoneme /ju:/ and /ʌ/ in most of the words. P2 also spelt correctly the final *y*, *ous*, and *ble* in all the words. Yet, he failed to spell the adjective suffixes *cient*, *ive* and *ed* correctly. In addition, the words with low phonological and orthographic transparency and with silent letters were not recalled, as well as the words that P2 tended to add letters to, for example, the word *beach* (*beatch*).

In TEST_2_b, there was an improvement by 8.5 percentage points; 29 words were retrieved (60.5%). P2 did not add *t* in the word *beach*, the phoneme /ʌ/, suffix *ed* and *ive* were correctly applied in all of the words. Yet, the suffix *cient* was not recalled, and the suffix *ous*, and the phoneme /i:/ for *e* and /ɪ/ for *i* were not consistently applied.

In TEST_2_c, a further improvement of 8.5 percentage points was observed; 33 words were retrieved (69%). P2 correctly applied the suffix *cient* for some words (e.g., *sufficient*) and *ous* in all the words. Also, the phoneme /ɜ:/ for *ear* (e.g., *research*), some words with low orthographic and phonological transparency (e.g., *luxurious*), the words with alike pronunciation and orthography (*bold*, *bald*), as well as the words that he tended to add letters were correctly spelt (e.g., *lot*). However, the quality of spelling of some of the words deteriorated. For instance, the medial phoneme /ɪ/ was spelt *e*

in some words, for example in the word *modernity* (*modernety*), and the phoneme /ʌ/ was spelt as *o* or *a*, for example in the word *culture* (*colture*) or *product* (*prodact*).

Table 8. Results of long-term retrieval assessment of the words taught in Session 2 (P2)

Tablica 8. Rezultati provjere dugoročnog dohvaćanja riječi iz sesije 2 (P2)

No. of the words acquired	TEST_2_a	TEST_2_b	TEST_2_c
48 words; 100% of the words P2 was exposed to	25 words (52%)	29 words (60.5%); an improvement of 8.5 percentage points	33 words (69%); an improvement of 8.5 percentage points

In session 3, in the baseline assessment, P2 did not apply double consonants (e.g., *attention*) and most of the vowels and vowel blends were spelt phonetically: the phoneme /i:/, for example in the word *deal* (*dil*), /eɪ/ in *retail* (*reteil*), /æ/ in *damage* (*damage*), and /ə/ in *major* (*mejer*). Also, silent letters were omitted, for example in the word *large* (*larg*), or added, for example in *watch* (*whatch*). Yet, noun suffixes *tion* and *ment* were correctly spelt (e.g., *consumption*, *requirement*), as well as the final *y* (e.g., *efficiency*), *ive* (e.g., *alternative*) and *ble* (e.g., *feasible*), which P2 had acquired in the previous session. The phoneme /ʌ/ for prefix *un-* was also correctly spelt (e.g., *uncanny*).

In the learning process, P2 acquired the spelling of 54 words, which was 100% of the words to which he was exposed. Most of the double-consonant words, and the words containing final silent letters (e.g., *ensure*) were quickly acquired. In addition, most of the vowel phonemes were correctly applied. It took longer to acquire the spelling of the words that contained medial silent letters (e.g., *advertisement*), the adjective suffixes *cial* and *tial*, the words with the vowel blend *ea* pronounced /i:/, for example in the word *cheat*, the words with the phoneme /ə/ spelt as *u* (e.g., *sustain*), the phoneme /ɜ:/ for *or* (e.g., *worse*), and the words with low orthographic and phonological transparency (e.g., *southern*, *doesn't*).

Regarding long-term retrieval, in TEST_3_a, P2 retrieved 43% of the acquired vocabulary (23 words). The words that were correctly spelt were the words with high grapheme-phoneme correspondence, the vowel phonemes /i:/ for *ea*, /jʊ/ for *u*, /eɪ/ for *ai* and /æ/ for *a* and double consonants only for some of the words.

In TEST_3_b, there was no quantitative improvement. However, the spelling of some words improved, for example, the words with *u* pronounced /ə/ were correctly spelt (e.g., *sustain*, *supply*), double consonants were correctly applied in some of the words (e.g., *occur*, *commodity*), the word *watch* was not spelt with silent *h*, and the words *hair*, *doesn't*, *wear* and *worse* were correctly spelt. However, the quality of spelling of some words deteriorated, for example, the words *emission* and *transmission* were spelt with *t* (*emittion*, *transmitio*), the letter *b* in the word *substantial* and *obstacle* was spelt *p* (*supstention*, *opstical*), some vowel phonemes were spelt incorrectly, for example, the initial /i:/ in *ensure*, *enlargement* or *encompass* was spelt *i*.

Table 9. Results of long-term retrieval assessment of the words taught in Session 3 (P2)

Tablica 9. Rezultati provjere dugoročnog dohvaćanja riječi iz sesije 3 (P2)

No. of the words acquired	TEST_3_a	TEST_3_b
54 words; 100% of the words P2 was exposed to	23 words (43%)	23 words (43%); no improvement

In terms of overlearning, the words that did not require overlearning or required one-time overlearning were high-frequency words and the words with high grapheme-phoneme correspondence, whereas more overlearning was required to acquire longer words, with low grapheme-phoneme correspondence, with alike pronunciation, and the words that contained silent letters and the vowel-consonant blends for /3:/ phoneme.

In regard to overlearning, the data suggests an improvement in the rate of learning. P2 needed overlearning of four times to acquire 12% of the words in session 1, whereas in sessions 2 and 3 the maximum number of overlearning sessions was two with 10.5% and 13% of the words acquired, respectively. There was a high number of words that did not require overlearning in any of the three sessions (63%, 54%, 46%, respectively); however this falling tendency may be related to the difficulty of the taught words.

A clear relationship between overlearning and long-term retrieval was not observed. The retrieval of vocabulary was at a similar level irrespective of how many times the word had to be taught: 70% of the words that did not need overlearning,

59% with one-time, 65% with two-time, 60% with three-time, and 66% with four-time overlearning.

8. DISCUSSION AND CONCLUSION

P1 quickly acquired the orthographic representation of consonants in English such as /k/ for *c*, /w/ for *w*, /ʃ/ for *sh*, /tʃ/ for *ch*, and relied on phonology for some vowel sounds such as /aɪ/ for *i* and /eɪ/ for *a* and /i:/ for *i*, which are present in the English alphabet, and which he had presumably learned in EFL classes. However, there was a lack of consistency in this regard. P1 tended to rely on phonetic spelling and L1 orthographic patterns, regardless of the previously acquired knowledge. This can be exemplified by the employment of /w/ in the word *swim*, vowel phonemes, or spelling of the final *y* pronounced /i/. This further suggests that in younger dyslexic EFL learners, development of spelling skills may occur on the word level rather than within specific spelling skills. Therefore, spelling acquisition is a dynamic process and distinctive stages of acquisition cannot be clearly defined. Yet, given the outcomes of the last assessment (TEST_1_d, TEST_2_c and TEST_3_b), in which P1 correctly spelt the consonant phonemes /k/, /ʃ/, /tʃ/ and /w/, it may be assumed that consonant phonemes will be more likely to be consistently employed than vowel phonemes. Vowel phonemes are notoriously difficult to acquire and it is unlikely that their acquisition will be sustained. Yet, it is worth mentioning that in the last assessment, P1 correctly spelt vowels with high phonological transparency such as *egg* or *orange*, and phoneme /ɪ/ in many words such as *milk* or *ill*, most likely by relying on the phonology of his L1. He also made partial representation of /u:/ for *oo*, for example in the word *good* (*got*) and /i:/ for *ee*, for example in the word *green* (*gren*), and correctly spelt the words with phoneme /ɪ/ such as *eleven* and *English*, presumably by relying on the memorisation strategy. Additionally, words with low grapheme-phoneme correspondence and words with similar pronunciation took longer to learn.

P2, given the results of the baseline assessment, had previous knowledge of English orthographic conventions for consonant phonemes, except for /ks/ for *x*, and he applied the rules consistently. He used phonic spelling for vowel phonemes, presumably with reliance on L1. He quickly acquired words with a final silent letter, double consonants, and high frequency words. It took longer to recall the spelling of word with similar pronunciation, with medial silent letters and some adjective suffixes (e.g., *cial*, *ous*) and vowel blends (e.g., *ea*) and vowel-consonant phonemes (e.g., /ɜ:/).

However, clear stages of acquisition of specific skills cannot be defined. Most spelling skills were developed on the word level such as the application of adjective and noun suffixes or vowel phonemes. Yet, it needs to be noted that some rules, once learned, have been applied throughout, for example the final *y* for the phoneme /i/ or /ju:/ for *ew*.

The data further suggests that both participants made similar misspellings. They spelt phonetically, had difficulty in applying correct vowel phonemes, omitted silent letters, added letters, had difficulties in applying double consonants, and they misspelt the words with similar pronunciation. Yet, P1 occasionally struggled to make the representation of all the sounds and made more non-phonetic errors and consonants exchange (e.g., *k-g*), whereas P2 made morphological errors such as adjective and noun suffixes. The findings also suggest that manifestations of dyslexia in a foreign language in relation to spelling do not stem from the native language of the learner but from the characteristics of the language that is being acquired since the misspellings made by both participants in this case study were similar to the ones made by native speakers of English (e.g., Treiman, 1993; Reid, 2004). However, dyslexic L2 learners may rely on the convention of their L1 in this regard. Yet, the presence of L1's orthography will be more prominent in younger L2 learners.

The data shows that both participants improved their spelling skills when explicit instruction was provided. In each session both participants acquired the vocabulary faster and there was also higher retrieval of the vocabulary from previous sessions. This quantitative improvement may have been due to an indirect effect of spelling instruction provided in consecutive sessions. Interestingly, when the instruction was removed, lack of quantitative improvement (session 1 words) or regression (session 2 and 3 words) was observed in the case of P1. In the case of P2 there was quantitative improvement (session 1 and 2 words) or lack of improvement (session 3 words). This suggests that explicit spelling instruction has a long-term benefit for older dyslexic EFL learners. This may be due to their higher metacognitive awareness, which makes them more independent learners. On the other hand, in order to establish sustainable improvement of spelling skills, younger learners may require continuous and long-term spelling instruction.

The findings of the present case study confirmed that individual differences, such as age, are a salient factor in the development of spelling skills in dyslexic EFL learners. Also, it was found that the development of spelling skills in dyslexic EFL learners is not a stage-like process but rather a process featured by overlapping and continuous

changes, which supports the theory of spelling skills development proposed by Siegel (1996).

Since the present case study involved only two participants, the implications of its results need to be treated with caution. The developmental trajectories and the analysis of misspelling discussed above should not establish any general principles about spelling acquisition by dyslexic EFL learners. However, the misspelling analysis in different stages of spelling skills acquisition provides pedagogical implications for dyslexic EFL learners at different ages, for instance, in regard to the rate of learning of specific spelling skills such as consonant and vowel phonemes and morphological forms. Also, the findings of this case study indicate that EFL teachers should consider adopting explicit spelling instruction when teaching dyslexic learners. Most spelling difficulties can be alleviated when appropriate teaching strategies are applied. This further ensures the gradual acquisition of spelling conventions of the English language, which leads to higher literacy skills as a whole, and more advanced communication skills. It can be assumed that the spelling skills of P1 as a young adult will be similar to P2's performance in baseline assessments if he does not receive any explicit spelling instruction in the future.

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Utjecaj faktora dobi na razvoj pravopisa u engleskom kao stranom jeziku kod hrvatskih učenika s disleksijom

Sažetak

Dosadašnja istraživanja o utjecaju disleksije (poteškoće u čitanju i pisanju) na usvajanje fonologije/ortografije u engleskom kao drugom ili stranom jeziku ispitala su utjecaj prvog jezika (D'Anguilli i sur., 2002), analizu pogrešaka (Kałdonek, 2011) te djelovanje metode eksplicitnog pristupa (Mortimore i sur., 2014). Međutim, za razliku od istraživanja provedenih na jednojezičnoj djeci s disleksijom (Nunes i Bryant, 2006) ili na dvojezičnoj djeci tipičnog razvoja (Nassaji, 2007), do sada nije provedeno istraživanje koje bi ispitalo razvoj pravopisa kod učenika s disleksijom različite dobi. Dakle, uzimajući u obzir postojeće teorije o razvoju pravopisnih vještina (Siegel, 1996; Bahr i sur., 2009), ovo longitudinalno istraživanje u trajanju od 31 mjeseca ispituje razvoj pravopisnih vještina kod dvoje učenika s disleksijom (dijete i odrasla osoba) kojima je materinski jezik hrvatski. Istraživanje uključuje analizu pogrešaka u dva razdoblja – za vrijeme poduke koja se temeljila na eksplicitnom pristupu (multisenzorne, strukturirane i metakognitivne metode prema Schneider, 1999) i nakon razdoblja poduke, kad ispitanici nisu imali poduku iz pravopisa. Cilj je ovog istraživanja bio odgovoriti na tri pitanja: 1) Hoće li biti moguće razlučiti faze razvoja pravopisa?, 2) Hoće li biti moguće ustanoviti pogreške vezane uz dob učenika? te 3) Postoji li razlika između učenika u pogledu stjecanja pravopisnih vještina?

Na temelju kvantitativnih i kvalitativnih podataka dobivenih ovim istraživanjem može se zaključiti da je faktor dobi važan u razvoju usvajanja fonologije/ortografije u engleskom jeziku kao stranom jeziku kod učenika s disleksijom, osobito u pogledu određenih pogrešaka i učinkovitosti eksplicitnog pristupa u nastavi. Budući da je ova studija analiza slučaja koja uključuje samo dva sudionika, implikacijama ovog istraživanja treba pristupiti s oprezom. Unatoč tome, individualne razlike između učenika treba pažljivo razmotriti s obzirom na to da razvoj pravopisnih vještina nije proces koji se odvija u etapama, nego proces koji odlikuju preklapanje i neprekidne promjene, što se izražava u potrebi individualnog pristupa, primjerice u trajanju poduke ili u poučavanju određenih pravopisnih vještina.

Ključne riječi: engleski kao strani jezik, razvojna disleksija, razvoj pravopisa, individualne razlike, eksplicitna metoda poučavanja pravopisa

